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Board Independence as Panacea to Tunneling? An Empirical Study of Related Party Transactions in Hong Kong and Singapore

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Abstract

This article examines the effect by imposing higher board independence requirement on private benefit extraction by corporate management or controlling shareholders in Hong Kong and Singapore, which are both international financial centers transplanting the Anglo-American corporate governance model in the 21st century. We show that higher board independence does negatively correlate with fewer related party transactions (RPT), indicate that better corporate governance might have an effect of reducing tunneling through RPTs. However, we find no causal effect of Hong Kong's imposition of minimum board independence threshold in 2012 on reducing tunneling. Our data also shows that a controlling having more ownership stakes does not necessarily mean more tunneling. Overall, this research lends support to existing literature on the role of better corporate governance in addressing agency costs, though the exact effect of a particular change of corporate governance rule on tunneling might be unclear if the rule is imposed and revised incrementally over time.

I. Introduction

Is higher board independence effective in reducing tunneling by corporate insiders? If so, should lawmakers keep increasing board independence requirements for the purpose of curbing tunneling? The former is a general question on the benefit of better corporate governance, and the latter is a normative one. Those are important questions for policymakers when designing corporate governance framework to support the capital market and protect minority shareholders. On the one hand, lawmakers need to know the potential effect of a specific solution (e.g. enhancing board independence) to evaluate potential benefit and regulatory impact. On the other hand, it is a separate question whether a specific amendment of law (e.g. to impose a minimum board independent requirement) would have any specific effect in the short or long-run. This article will attempt to answer the two questions with data collected from listed companies in Hong Kong and Singapore, the two largest financial centers in Asia Pacific.

In general, tunneling refers to "transfer of assets and profits out of firms for the benefit of those who control them" (S Johnson et al. 2000, 22). It also appears to be a problem in the Far East commonly with concentration of ownership, [1] which may raise the possibility of tunneling (Lemmon and Lins 2003). To address the problem, there arises the concept of corporate governance. Among all the regimes, enhancing board independence by having more objective outsiders onto the board of directors is a key solution to corporate governance problems for some policymakers.[2]

The idea has also been adopted in the international level. The Principles of Corporate Governance published by the Organization for Economic Cooperation and Development (OECD), originally developed in 1999[3] with the latest version endorsed by the G20 in November 2015,[4] recognize that "the board is chiefly responsible for monitoring managerial performance and achieving an adequate return for shareholders, while preventing conflicts of interest and balancing competing demands on the corporation"[5] and to "oversee the risk management system and systems designed to ensure that the corporation obeys applicable laws ..."[6] In order for boards to effectively fulfil their responsibilities, "they must be able to *exercise objective and independent judgement*"

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[1] Arguably "concentrated ownership is the rule rather than the exception in most part of the world." (Berkman, Cole, and Fu 2009, 141). Claessens et al. has found that there was a high degree of concentration of ownership among 2,980 companies in nine East Asian countries. In particular, voting rights often exceeded cash-flow rights via various controlling structures and it was common to have a single controlling shareholder or family (Claessens, Djankov, and Lang 2000). Carney and Child concluded that corporate ownership become more entrenched where status quo political arrangements persist after studying 1,386 companies in East Asia over a ten-year span. They also found that the state also became increasingly important as owners of both domestic and foreign firms (Carney and Child 2013). Our data (see below Part III) also lend supporting to those researches more than a decade into the 21st century. Concentration of ownership also appears in some continental European countries. (Faccio and Lang 2002). Even in the US the assumption of widely-held firms being the norm has been challenged (Holderness 2009).

[2] Even in the U.S., it has been noted that independent directors have become a popular "cure-all" for whatever the latest malady ailing the modern corporations (Pritchard 2009, 1).

[3] G20/OECD Principles of Corporate Governance (2015), 4.

[4] See OECD website: http://www.oecd-ilibrary.org/governance/g20-oecd-principles-of-corporate-governance-2015_9789264236882-en.

[5] G20/OECD Principles of Corporate Governance (2015), 51.

[6] G20/OECD Principles of Corporate Governance (2015), 51.

(emphasis added).[7] Thus, the OECD recommends that "[b]oards should consider assigning a sufficient number of nonexecutive board members capable of exercising independent judgement to tasks where there is a potential for conflict of interest."[8]

On this basis, we have seen the transplantation of the model of corporate governance in the UK and US (the Anglo-American model) in the Far East since the Asian Financial Crisis in 1997, building on broad academic literature identifying the association of tunneling or wrongdoings with poor corporate governance practice and claiming that better corporate governance would improve firm value.[9] Through higher board independence, we expect independent directors would provide more objective view and check-and-balance on the behaviors of management and controlling shareholders so that we may reduce the chance of tunneling.

However, does higher board independence really have the effect of reducing tunneling? As we will elaborate below, there are reasons to suspect that independent directors might not be as function and effective. Since controlling shareholders have voting power to elect directors, it is natural that they would pick candidates who are friendlier to them so that the function of independent directors might be compromised. Whether some of those independent directors are truly independent may also be questionable at times, as there could be other connections which may affect one's independent judgment but which may not be clear to other stakeholders.[10] If we follow this line of reasoning, then the transplantation of the Anglo-American model of corporate governance must adapt to the local context, as Donald argues in the case of Hong Kong (Donald 2013).

In addition, it is one thing when a regulator first introduces the board independence requirement (no matter in the form of minimum numbers or minimum proportion) to listed companies. It might be a different story when a regulator enhance an existing requirement to a higher level. The first introduction might have a cleaner effect. However, it is unclear whether subsequent reforms would reach the same result.

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[7] G20/OECD Principles of Corporate Governance (2015), 51.
[8] G20/OECD Principles of Corporate Governance (2015), 58-59.
[*] The authors are grateful for Singapore Ministry of Education (MOE) Academic Research Fund Tier 2 grant with the MOE's official grant number MOE2015-T2-1-142 for this project.
[9] See below Part II.B.1.
[10] See below Part II.B.2.

The aim of this research is to provide empirical evidence to examine whether higher board independence is indeed an effective tool in addressing tunneling through related party transactions (RPTs). In particular, we aim to find out whether raising board independence standards would have the effect of reducing tunneling, as it is what regulators expect from the rule. The results from our data would also help policymakers in not only the largest two international financial centers in Asia but also other developed or developing countries in the region to re-think the merit of improving corporate governance as well as strategies to adapt the Anglo-American model in the local context. We use RPTs as an important benchmark as it is a common way for controlling shareholders or management to obtain private benefits of control and to divert resources into their own pocket. Many corporate scandals in East and Southeast Asia also had something to do with RPTs with controlling owners. In addition, independent directors play a key role in vetting RPTs in the Anglo-American model (Enriques, Hertig, and Kanda 2009) and therefore higher board independence is expected to have an effect of reducing tunneling.

This article will present our findings of a sample of companies listed in the Mainboard of the Stock Exchange of Hong Kong (SEHK) and the Singapore Exchange (SGX) between 2009 and 2015. Both Hong Kong and Singapore sharing the same common law heritage and transplanting corporate governance codes from the UK,[11] while thriving as international financial centers in East and Southeast Asia. The research would contribute to the study of corporate law and capital market regulations through the study of potential correlation and causal effect of a change of rule to a problem that invites regulation in the first place. It would offer insight on how the market might react to regulatory changes and provide different perspectives for regulators, shareholders and investors to oversee corporate management and controlling shareholders amid different options in restraining corporate insiders, while enhancing board independence has become a common phenomenon.

In the remaining of this article, Part II first explore the background of legal transplant and contrast two different angles on the relationship between better corporate governance and less tunneling through RPTs. We also present our hypothesis on how the legal reform would impact RPTs. Part III will present our data design, findings and analysis. Part IV concludes this article.

[11] See below Part II.B.1.

II. Legal Transplant, Board Independence and Tunneling

In this part, we first explore the background of the transplantation of the Anglo-American model of corporate governance in Hong Kong and Singapore. We then illustrate different arguments for or against higher board independence as the key regime to address tunneling before laying out our hypothesis and explain our study design before presenting data and analysis in Part III.

A. Background: The Transplantation of Anglo-American Model of Corporate Governance in Hong Kong and Singapore

Since the Asian financial crisis in 1997, we have seen the transplantation of the Anglo-American Model of Corporate Governance from the UK or US among many large Asian economies in the Far East. For example, under the pressure of International Monetary Fund as part of the package to deal with the financial crisis, South Korea first amended the listing rules to impose requirements of independent directors before amendment into the Securities Exchange in 2000 (Chun 2016). The China Securities Regulatory Commission (CSRC) in 2002 started to require listed companies to have independent directors, [12] with further codification in the Companies Act in 2005 (effective from 1 January 2006).[13] Taiwan shared a similar pattern by first having board independence requirement in listing rules in 2002 before codification into the Securities and Exchange Act in 2006 (Chou 2013, 52).

Hong Kong and Singapore, the leading two international financial centers in Asia Pacific, were no exception to join the party. As both markets share the common law heritage, they have similar legal infrastructure and institution to the UK to implement the Anglo-American model of corporate governance. In both jurisdictions, the objective of legal transplantation is stated to increase the protection of investors (Corporate Finance Committee 1998; Hong Kong Stock

[12] 證監會，上市公司治理規則(證監發[2002]1 號)，articles 49-51. (http://www.csrc.gov.cn/pub/newsite/flb/flfg/bmgf/ssgs/gszl/201012/t20101231_189703.html)
[13] 公司法(中華人民共和國主席令第 42 號) article 123.

Exchange 2008). Both markets also adopt the style of "comply or explain" corporate governance codes rather than implementing corporate governance standards through mandatory rules. Hong Kong and Singapore both improve corporate governance standards incrementally.

In Hong Kong, the listing rules of Stock Exchange of Hong Kong (SEHK) in 1993 started to require a minimum of two independent non-executive directors.[14] However, Hong Kong did not prescribe a minimum proportion (instead of mere minimum numbers) of independent directors until the Code of Corporate Governance 2004, which only recommended one third of the board to be independent.[15] Only since 2013[16] the SEHK requires at least one third of the board to be independent in the 2012 amendment of Code of Corporate Governance Practices.[17] However, we should note that the minimum 1/3 requirement is still "comply or explain" in nature.

Part of the reasons behind the SEHK's decision to impose the minimum 1/3 requirement is to improve independent directors' participation in corporate governance matters such as taking more roles in some sub-committees like the remuneration committee (Hong Kong Exchange and Clearing Ltd 2010, [69]). The SEHK also expected independent directors to "represent shareholders as a whole where other directors may have a conflict of interests" and to advise shareholders on whether the terms of connected transactions are fair and reasonable (Hong Kong Exchange and Clearing Ltd 2010, [68]).

In Singapore, rules regarding independent directors are contained in the Code of Corporate Governance. Although the Code was issued by the Monetary Authority of Singapore, the Code was also "comply or explain" in nature, as the Singapore Exchange's listing rules require compliance with the Code and a firm must disclose any deviation from any guideline of the Code with an appropriate explanation.[18] The first version of the Code of Corporate Governance was

[14] See SEHK Mainboard Rule 3.10(1). Rule 3.19 (transitional provision, marked up version of the previous Rule 3.15) of the Main Board Listing Rules (2004) in https://www.hkex.com.hk/eng/rulesreg/listrules/mbrulesup/documents/ch%203.pdf (marked up version, including amendments)
[15] Stock Exchange of Hong Kong (SEHK), Note to subscribers for the amendments to the rules governing the listing of securities (the "Listing Rules") Update No. 80 in <https://www.hkex.com.hk/eng/rulesreg/listrules/mbrulesup/mb_rupdate_cover.htm>
[16] See note to SEHK Mainboard Listing Rules 3.10A.
[17] Code on Corporate Governance Practices, Appendix 14 to the Main Board Listing Rules (2004) <https://www.hkex.com.hk/eng/rulesreg/listrules/mbrulesup/documents/main%20board_app14(code).pdf>
[18] SGX Mainboard Listing Rules rule 710.

published in 2001[19] to require a company to have at least 1/3 of the board being independent directors, which is defined as "one who has no relationship with the company, its related companies or its officers'.[20] The same requirement was maintained in the Code of Corporate Governance 2005. The Code of Corporate Governance 2012 made the biggest revision so far, further requiring a company to have not only a minimum of 1/3 of independent directors on the board but also to raise the bar to half of the board under certain conditions.[21] The 2012 Code also broadens the definition of independence to include relationship with a 10% substantial shareholder,[22] and a director should not be deemed as independent directors if he has served the company for more than 9 years.[23] However, companies are only expected to fully implement changes made in the 2012 Code from the financial year commencing on or after 1 May 2016.[24]

The transplantation of corporate governance rules in Asia could be to a certain extent influenced by the "law and finance" literature, which suggested that the legal framework governing financial markets and corporate governance had an important role to play in creating the conditions for economic growth in low and middle-income countries (La Porta, Lopez-de-Silanes, and Shleifer 2008; La Porta et al. 1998). Although the 'law and finance' theory has been doubted in later studies (Roe 2006; Armour et al. 2009; Spamann 2010), the endorsement of the La Porta study in the World Bank's first report on *Doing Business* influenced many jurisdictions (including Singapore and Hong Kong) to adopt and strengthen various concepts of the Anglo-American model (World Bank, 2004).

Legal transplantation of independent directors regime seemed to smooth and successful in both jurisdictions. In Hong Kong, there is high compliance of the one-third rule requirement even before the introduction of rule in 2012 (Hong Kong Stock Exchange 2008; Hong Kong Stock Exchange 2013). In the consultation paper preceding the revision of the Code of Corporate Governance Practices in 2012, the SEHK indicated that about 79% of all issuers by 31 August

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[19] Available in http://www.mas.gov.sg/regulations-and-financial-stability/regulatory-and-supervisory-framework/corporate-governance/corporate-governance-of-listed-companies/code-of-corporate-governance.aspx.
[20] Code of Corporate Governance (2001) Guidance Note 2.1.
[21] The board should comprise of at least half of its members being independent directors if the chairman and chief executive are the same person or immediate family members, or when the chairman is part of the management team or not an independent director. Code of Corporate Governance 2012 Guidelines 2.1 and 2.2
[22] Code of Corporate Governance 2012 Guidelines 2.3.
[23] Code of Corporate Governance 2012 Guidelines 2.4.
[24] See MAS website: http://www.mas.gov.sg/regulations-and-financial-stability/regulatory-and-supervisory-framework/corporate-governance/corporate-governance-of-listed-companies/code-of-corporate-governance.aspx.

2010 have independent directors that met the one-third threshold (Hong Kong Exchange and Clearing Ltd 2010, [70]). A study of Hang Seng Index (HSI) companies reports an increase in proportion of independent directors from 36.7% in 2007 to 39.6% in 2011 (Hong Kong Institute of Chartered Secretaries 2012). In Singapore, one report showed that the proportion of companies with at least one-third independent directors on boards of SGX-listed firms increased from 80% in 2001 to at least 95% in 2006 (Singapore Institute of Directors 2002; Mak 2007). Another study shows that 37% of companies have boards, at least half of whom comprise independent directors, in 2009, up from 22% in 2000 (Singapore Institute of Directors 2001; Singapore Institute of Directors 2010). As we will show in Part III below, our data also support the general statistics.

B. Effect of Board Independence and Tunneling

The separation of ownership and control has been a signature feature of modern companies around the world (Jensen and Meckling 1976). One pertaining issue flowing from this phenomenon is the agency problem (e.g. manager expropriating personal benefits from the company) that might undermine a company's true value. Broadly speaking, there are several legal regimes dealing with potential tunneling through RPTs. On the one hand, the liability rule plays its part in controlling RPTs and tunneling. Both Hong Kong and Singapore follow the English common law tradition so that directors owe fiduciary duties to the company.[25] On the other hand, lawmakers also seek to reduce tunneling by putting RPTs through more transparency. As both Hong Kong and Singapore generally adopt the International Financial Accounting Standards (IFRS), listed firms are expected to disclose RPTs in financial statements pursuant to accounting standards.[26] In addition, a listed firm has to disclose some RPTs pursuant to exchange rules. For example, the listing rules of SGX requires a company to disclose 'interested person transactions' in its annual report.[27] Similarly, the SEHK requires certain 'connected transaction' has to be disclosed.[28] However, we should note that standards for transactions that should be disclose may vary depending on exchange rules. Between SEHK and SGX, the definitions of "connected person" and "interested person" also differ to a certain extent.

[25] See *Bristol & West Building Society v Mothew* [1998] Ch 1, 18-19 (per Millet J).
[26] E.g. IAS 24 for IFRS or ASC 850 for GAAC standards.
[27] SGX Mainboard Rules Chapter 9.
[28] SEHK Mainboard Listing Rules Chapter 14A.

While it is beyond the scope of this article to examine the effectiveness of the liability rule and disclosure in deterring tunneling in either market, what concerns us is to address the agency problem is to improve the independence of the board by having more directors from the outside (Fama and Jensen 1983; Fama 1980) that we will elaborate in the next section. However, our question is whether a higher degree of board independence must mean fewer tunneling by corporate insiders if one essential purpose of improving corporate governance is to protect investors. In this section, we will present two different views.

1. Positive View

A more positive view is that better corporate governance must be able to reduce tunneling. This is the expected consequence of improving corporate governance standards. Johnson et al. suggest that in countries with weak corporate governance, worse economic prospects might result in more tunneling by managers and then a fall in asset prices (Johnson et al. 2000a). Thus, stronger corporate governance and board independence have been seen as a solution to tunneling. On the one hand, the audit committee, which should be comprised of mostly independent directors,[29] is responsible for vetting RPTs. On the other hand, if a RPT is raised to a board meeting, independent directors are supposed to offer a more objective view on the matter. In other words, through the eyes and brains of independent members of the board, we expect they can exercise their supervisory function to ensure the fairness of RPTs and to reduce the chance of tunneling. Overall, there could be some deterrence effect as those want to commit to tunneling might be more reluctant to go through the process. With the audit committee in charge of reviewing the financial statement and supervising the internal and external audit, the quality of disclosure should be ensured.

In general, researches seem to agree that tunneling would have a negative implication on firm performance in not only the US (Kohlbeck and Mayhew 2010) but also some Asian economies such as Korea (Kang et al. 2014; Joh 2003). Cheung et al. found that companies announcing connected transactions earn significant negative excess returns, which were lower than firms announcing arm’s length transactions, after examining 375 filings of connected transactions in Hong Kong between 1998 and 2000 (Cheung, Rau, and Stouraitis 2006).

[29] E.g. Singapore Code of Corporate Governance 2012 Guidelines 12.1.

There are broad academic literature supporting the view that better corporate governance is linked to better firm value (La Porta et al. 1998; Dahya and McConnell 2007; Duchin, Matsusaka, and Ozbas 2010). Another research suggest that institutional investors might be willing to pay a higher premiums for shares of companies with good corporate governance in emerging markets, especially in countries where legal protection of investors is weak (Chen, Chen, and Wei 2009). One study shows that an exogenous increase in the proportion of independent directors result in an increase in corporate transparency (Armstrong, Core, and Guay 2014). A study in Indonesia also supports the argument that the quality of RPT disclosure usually also means better corporate governance (Utama and Utama 2014a). There are also researches confirming the effect in companies with concentrated ownership (Baek, Kang, and Park 2004).

In sum, if better corporate governance could improve firm value and transparency, it implies that it would also reduce the chance of tunneling, which would negatively affect a company's value. As Dahya et al. argued, "independent directors can reduce the threat of wealth transfers to the controlling shareholder by limiting disadvantageous RPTs" (Dahya, Dimitrov, and McConnell 2009, 76). There are some limited academic support to show the negative correlation between better corporate governance and the amount of tunneling in finance literature. Yeh et al. found negative correlation between better corporate governance and RPT in a study in Taiwan (Yeh, Shu, and Su 2012). Utama and Utama examined over 200 firms listed in Indonesia with financial data between 2005 and 2008. They found that better corporate governance is negatively correlated with RPT liabilities, though they found no significant correlation with RPT assets (Utama and Utama 2014a).

2. Negative View

The previous sections show that one core solution to tunneling is to have more independent directors on the board to help monitoring and supervising RPTs, auditing and disclosure of financial or material information. However, there are also countering arguments challenging the effectiveness of board independence in addressing agency costs.

First, it is human nature that corporate controllers would prefer to identify candidates who are more inclined to agree with them, though they are technically independent in the eyes of law. Other social or informal relationships might affect how an independent director would behave considering his relationship with the controlling shareholder or management (Lin 2013). For example, one might consider his relationship with other directors before making a decision during a board meeting, e.g. by lowering the standard when approving a RPT due to relationship if the transaction is with the big boss. In other words, an independent director may only be independent on paper. If this is a widespread problem, it might undermine the effectiveness of board independence regime. In addition, given that independent directors still have to be elected by shareholders in a general meeting, it grants more power to controlling shareholders to appoint the persons they prefer (or to remove those they do not like). From the legal angle, the criteria and who determines whether a director is independent would become a significant issue to ensure the integrity of the board independence regime (Hopt 2011, 27).

Second, it is beyond anyone's control whether one truly raises voices or fulfil his function in the board room. We probably all have experienced a situation where we keep silent even though we disagree on a matter. There could be many reasons for those kind of action. How one might behave in the board room and interact with others cannot be told by simply looking at one's professional standing, education or work experiences. This requires a study on one's character that the concept of 'independence' based on some hard benchmarks might not capture. Moreover, even if an independent director is eager to exercise his function, how much he can achieve may still depend on the information he may acquire. The lack of information (or delay in acquiring information) on corporate management issues or related party transactions may hinder his ability to make proper judgments.

In sum, there are reasons to suspect whether having independent directors would be able to reduce wrongdoings by corporate insiders. The question then is whether potential problems of independent directors have outweighed potential benefits. On this basis, we will set out our hypothesis and research design in the next section.

C. Hypothesis Dataset Design

Which view described in Section B above describes better the effect of the introduction of Anglo-American model of corporate governance in Asia on reducing tunneling through RPTs? Answers to this question matter as we have come to a stage where lawmakers have to reflect on the effectiveness of the reforms, and if it is not as effective as it is intended, consider how to revise the current regime.

First, if the improvement of corporate governance standards is meant to enhance governance standards and reducing tunneling and wrongdoings, lawmakers must anticipate that higher board independence should have the effect of reducing tunneling. Thus, we hypothesize that there should be less tunneling committed by corporate insiders with more independent directors on the board while other beneficial kinds of RPTs should not be affected. In aggregate, the overall level of RPT should be negatively correlated with the level of board independence.

Hypothesis 1: A higher degree of board independence should negatively correlate with the level of RPT.

In addition, we expect that companies that responds to the change of law to improve board independence standards should have a lower level of tunneling after the treatment than before, in contrast with firms that have already complied with relevant rules. In other words, the effect of reduction of tunneling should be more obvious in firms receiving treatment, in contrast with firms that have already complied with the requirement for a long time. This would give us a measure of the effect of a particular rule-change on corporate behaviors.

Hypothesis 2: *Firms that raise the degree of board independence in response to law reforms should have less RPT after the response.*

Third, we expect that the improvement of corporate governance would have a more pronounced effect in reducing tunneling through RPT on firms that are more likely to suffer from tunneling. The ensuring question is how to identify firms prone to tunneling. One essential factor is probably the character of the controlling shareholder or the top management of a company. Some people would have a higher degree of integrity so that they would not tunnel even presented with an opportunity. In contrast, some people would find holes to extract personal benefits from the company even with all the monitoring regimes. However, this is beyond the scope of this study to devise a method to profile corporate controllers. Instead, we may seek other proxies as potential benchmarks.

One proxy that this article will entertain is concentration of ownership. As mentioned above, more concentrated ownership structure increases the likelihood of an insider expropriates minority shareholders (Lemmon and Lins 2003). It is also seen as a sign of poor legal protection (La Porta et al. 1998). On this basis, we may hypothesize that companies with higher ownership concentration would be more prone to tunneling. In other words, we hypothesize that controlling shareholders should be less keen to hire a more rebellious independent director and instead they would prefer someone who is more obedient or one who they are more familiar with. Therefore, independent directors would be less likely to perform their monitoring function effectively, resulting in less impact on tunneling.

Hypothesis 3: Higher degree of board independence should have more obvious effect on tunneling in firms with a higher degree of concentration of ownership.

To test our hypothesis, we conduct a study of a sample of listed companies in Hong Kong and Singapore. First, we choose Hong Kong and Singapore as the object of study because both countries share some common characteristics yet there are differences. On the one hand, both markets are city-states hosting successful international financial centers that continue to strive for more competitive edge. On the other hand, both markets inherit the English legal tradition and both have decent legal institution to protect investors and are generally known law enforcement to maintain market integrity. With the underlying legal institution and infrastructure in similar shape, it is easier to compare the difference that a law reform might create (e.g. the inefficiency in law enforcement in some countries).

Second, we sample 25% of all companies listed in the Mainboards of both SEHK and SGX as in 1 January 2009 (and were still listed by the end of 2015), resulting in a total of 254 companies from SEHK and 103 from SGX, with a total of 2,499 firm-year observations, to create a panel data. Variables and information we collect could be divided into four groups: information about the company (e.g. place of registration, industry, or top beneficial owner, etc.), board composition (e.g. the number of directors or independent directors on the board), and financial data (e.g. total assets and liabilities or earnings each year) and RPT data. Since companies may report data in different currencies, we convert all financial and RPT data into US dollars by calculating the annual average of exchange rate between the USD and the reporting currency based on the daily exchange rate reported by the Board of Governors of the Federal Reserve System.[30] The main source of information is from those companies' annual reports (where available) and financial databases,

[30] See Federal Reserve website: https://www.federalreserve.gov/releases/h10/Hist/.

primarily from Datastream. Other than some financial information, most data have to be coded by collecting information from annual reports.

Regarding RPTs, we mainly use information reported in the notes financial statements reported by each company for each year. Both Hong Kong and Singapore adopt the International Financial Accounting Standards (IFRS), and there is no significant change to the accounting standards governing disclosure of related party transactions since 2009.[31] Thus, the ways companies reported RPT data should be comparable. Based on the data reported in the financial statement under the section of related party transaction, we may calculate the total amount of RPTs committed by the company on a group basis due to consolidated financial statement. However, since the data is reported on an aggregate basis, we cannot calculate the number of RPTs (in terms of number of transactions) like some studies on US RPT data (Gordon, Henry, and Palia 2004; Kohlbeck and Mayhew 2010). Therefore, we focus on whether the legal shock in Hong Kong caused any reduction in the amount of RPT (or any subsets of RPT) reported pursuant to the accounting standards rather than the number of transactions conducted by a firm, as both Hong Kong and Singapore do not require firms to disclose the number of transactions in law or in exchange rules.

To facilitate our study, we further classify sample firms into three categories in terms of the compliance record to the minimum requirement of 1/3 of the board being independent directors. The first category is those companies which have already been complying with the requirement since 2009. In contrast, the second category is those never comply with the requirement. The third category is the our treatment group, which we loosely define as the group of companies which change the composition of board to raise the proportion of independent directors from below 1/3 to more than 1/3. In all our Singapore sample companies, they all belong to the first category. This is an expected result as Singapore has imposed the minimum 1/3 threshold in the first Code of Corporate Governance published in 2001. In our Hong Kong sample, 204 of 254 companies (80.31%) belong to the first category, with 49 companies (19.29%) falling within the treatment group. The sole company in Hong Kong that belongs to the second category have missing values since 2013 due to the lack of annual reports. Therefore, in Hong Kong we can largely classify firms into two groups: companies that responds to the legal change to improve board independence

[31] For the history of related party disclosure under the IFRS, see https://www.iasplus.com/en/standards/ias/ias24.

above the minimum threshold (the treatment group) and other companies that always comply during the period (as the control group). On this basis, we will present our empirical findings and analysis in the next part.

III. Empirical Evidence and Analysis

A. General Descriptive Data

We start by illustrating some general descriptive data, shown in Table 1 below.[32] First, concentration of ownership in both markets is obvious. The mean of largest beneficial interests in the share of the company is about 46.23% in SEHK firms and about 41.19% in SGX firms, with the differences means statistically significant (p<0.001). In the case of a state being the largest beneficial owner, the concentrated ownership is more pronounced in Hong Kong than in Singapore. In addition, nearly 75% of our firm-year observations in Hong Kong has a beneficial owner over 30% and nearly 66% in Singapore (about 89% in Hong Kong and 87% in Singapore if we lower the threshold to 20%). If we analyze concentrated ownership for each year, we find the mean of highest beneficial interests held by an owner did not vary over the span of 7 years in both Hong Kong (p=0.71) and Singapore (p=0.48). Therefore, most companies in our sample have a stable and significant beneficial owner. Nonetheless, our sample shows that firms with largest beneficial owner being the state have a larger mean of beneficial interests in our Hong Kong sample (p<0.001), while the reverse is true in our Singapore sample (p=0.01). This would show that the SOEs would have a larger role to play in our Hong Kong sample.

Table 1 Descriptive data of ownership and some corporate governance benchmarks

	Hong Kong		**Singapore**	
	Observations	**Mean**	**Observations**	**Mean**
Total sample size: firms(observations)	254 (1778)		103 (721)	
Ownership data				
Total (% of shares)	1769	46.23	712	41.19
State beneficial owner (% of shares)	316	52.30	32	33.52
Non-state owner (% of shares)	1452	44.91	680	41.55

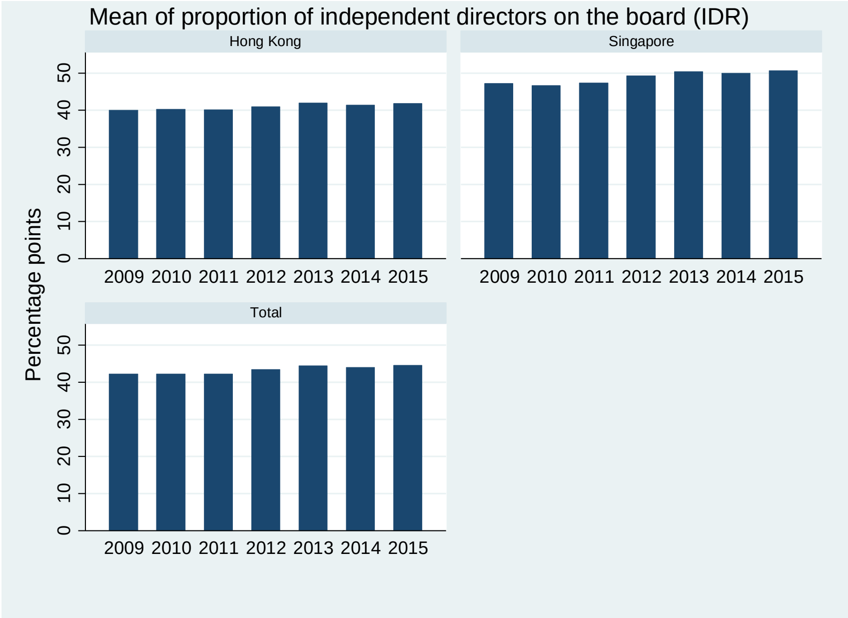
[32] We should note that there is a small number of missing values for some firms in some years due to the lack of annual reports.

Corporate governance benchmarks				
Number of directors on the board	1769	8.97	719	7.00
Number of independent directors on the board	1769	3.52	719	3.38
Proportion of independent directors on the board (*IDR*)				
Total	1769	40.96%	719	48.86%
Firms with 30% beneficial owner	1335	40.42%	468	48.47%
Firms with state owner	316	37.16%	32	56.05%
Firms with other owners	1443	41.76%	687	48.52%
Notes: There are some companies with missing annual reports, leading to differences in the number of observations.				

Regarding corporate governance benchmarks, we have the following observations. First, the mean of proportion of independent directors on the board (*IDR*) is statistically significantly higher in Singapore than in Hong Kong ($p<0.001$). In terms of the numbers of independent directors (*ID*) on the board, the mean in Hong Kong is statistically significantly higher than in Singapore ($p=0.002$), though the small difference is negligible.

Second, in both Hong Kong and Singapore, there seems to be an increase of *IDR* over time. This is shown in Figure 1 below. While the increase in means in either market is statistical significant ($p=0.004$ for Hong Kong and $p=0.005$ for Singapore), the increase is marginal in terms of percentage points per year with 0.36% per year in Hong Kong and 0.72% in Singapore.

Figure 1 *IDR* by year and market



The general RPT data is illustrated in Table 2 below. In general, the mean of total RPT level is much higher in Hong Kong than in Singapore (p=0.04). However, the distribution of RPT data is highly skewed. As we can see from Table 2, the mean and median of total RPT data differ greatly. There are also a considerable number of observations that do not report any RPT at all or a small amount of RPT, while some companies have a large volume of RPT. Our solution is to have RPT data naturally logged. This will be a common approach we use when analyze RPT data. However, even with logged data, we find that the average level of RPT conducted by companies in our sample is much higher in Hong Kong than in Singapore.

Table 2 Descriptive data of overall related party transactions

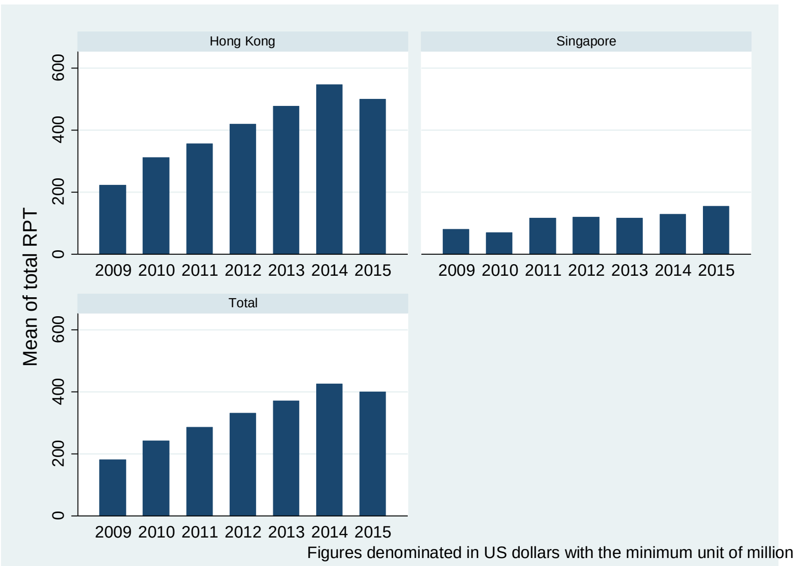
	Hong Kong			Singapore		
	N	Mean*	Median*	N	Mean*	Median*
Total RPT	**1770**	**404.13**	**2.50**	**720**	**111.90**	**0.86**
Total RPT between 2009 and 2011	762	296.69	2.21	309	88.77	0.82
Total RPT between 2013 and 2015	755	507.43	2.56	308	132.59	0.81
By local/foreign companies						
Local companies	322	149.20	4.89	616	105.8415	0.98
Foreign companies	1447	460.99	2.13	104	147.7693	0.15
Chinese companies	202	2828.44	71.05	0	NA	NA

By ownership						
Companies with 30% beneficial owner	1325	523.23	3.71	469	132.20	0.97
Companies with state being the large owner	316	1999.12	85.76	32	1602.53	14.27
Companies not owned by state or financial firm	1443	55.40	1.08	688	42.57	0.80

* Figures denominated in USD million.

Figure 2 below shows the the time trend. In general, the mean of total RPT seems to go up as time goes by or if we compare the means of the two three-year periods before and after 2012 in both markets in Table 2. While it seems that the mean of total RPT rises over time, regression analysis rebuts statistical significance between time and total RPT level if we control also company size (with total assets and total revenue in each year) in both markets with cluster option with combined data or if we analyze each market separately. Thus, at least there is no evidence showing that there is more (or less) RPT over time. This leaves it unclear about the effect of the law reform in Hong Kong in 2012.

Figure 2 Mean of total RPT over the years



In sum, our descriptive data shows that most our sample companies in both markets have concentrated ownership with at least one 30% controlling beneficial owner. In both markets, we have seen a marginal increase of *IDR* between 2009 and 2015. Regarding RPT, we do not find the mean of total RPT changes over time in either market, though the mean seems to be a lot higher in Hong Kong than in Singapore. On this basis, we will analyze the correlation between *IDR* and RPT in the next section.

B. Correlation between board independent and Related Party Transactions

Is higher degree of board independence negatively correlated with the level of RPT? A negative correlation may justify the common position of requiring some degrees of board independence to improve corporate governance standards.

Our key explanatory variable is the proportion of independent directors on the board, *IDR*. To more precisely measure the effect of *IDR* in each market, we include other variables that could be measured and which could influence the level of RPT. First, we use some corporate governance benchmarks, including *EXEC_CHAIRMAN* being a dummy if the chairman is an executive director (coded as 1, and otherwise 0), and *DUALITY* being a dummy if the chairman and chief executive officer (CEO) is the same person (coded as 1, and otherwise 0). We expect firms with an executive director and/or chairman-CEO duality to have a poorer degree of corporate governance. As commonly used by finance literature, we also assume that a firm would have a higher quality of disclosure and thereby less likelihood of tunneling if it is audited by the big 4 auditing firms. We did not use having the audit committee as a dummy because all our samples have audit committees during the research period.

Second, we also expect that company size and profitability may influence the level of RPT. For example, a company might have more intra-group trading with companies owned by the same holding company if the company is larger. Thus, we also include indicators of company size (in terms of both total assets (*TOTAL_ASSET*) and annual revenue (*REVENUE*), both logged) and profitability in terms of return on assets (*ROA*) in each year.

As we expect the degree of concentration of ownership would have a correlation with tunneling, we also include the figure of largest beneficial interests (*SHAREHOLDING*) in terms of percentage points. Since Chinese SOEs dominate the Hong Kong market, we also include a dummy to indicate state ownership (*STATE*) if a government is the largest beneficial owner. This would also help us to isolate potential difference between a state owner and a private controlling shareholder. To manage the time effect, we also include a time variable (*YEAR*) with each year being a dummy. While we also present market-specific data, we would include the country variable (*MARKET*, a dummy coded as 1 for Singapore and as 2 for Hong Kong).

We present data by using the clustering option to control firm-level characteristics. The regression results with various models for the combined pool as well as for Hong Kong and Singapore respectively are shown in Table 3 below.

Table 3 Regression table for total RPT

	(1) Combined data	(2) Combined data	(3) Combined data	(4) Combined data	(5) Combined data	(6) Hong Kong only	(7) Singapore only
IDR	-0.0575***	-0.0336**	-0.0309*	-0.0277*	-0.00241	-0.0268	-0.0298
	(-4.48)	(-2.92)	(-2.42)	(-2.28)	(-0.30)	(-1.57)	(-1.77)
TOTAL_ASSET		0.00000805*	0.481***	0.416***	0.515***	0.389**	0.471*
		(2.30)	(4.61)	(4.04)	(3.85)	(3.32)	(2.07)
REVENUE		0.755***	0.460***	0.386***	0.139	0.412***	0.287
		(10.78)	(4.89)	(4.12)	(1.94)	(3.89)	(1.38)
EXEC_CHAIRMAN			-0.261	-0.326	-0.0908	-0.253	-0.345
			(-0.80)	(-1.03)	(-0.28)	(-0.69)	(-0.60)
DUALITY			-0.490	-0.221	-0.266	0.00546	-0.859
			(-1.48)	(-0.69)	(-1.02)	(0.01)	(-1.54)
MARKET			0.0347	-0.113	0	0	0
			(0.10)	(-0.34)	(.)	(.)	(.)
SHAREHOLDING			0.00743	0.00524	0.00669	0.00260	0.0115
			(1.11)	(0.78)	(1.08)	(0.33)	(0.90)
STATE				2.375***	-0.785	2.534***	1.530
				(5.36)	(-1.18)	(5.80)	(0.77)
ROA			-0.00270	-0.00133	-0.00157	-0.00192	0.00412
			(-1.35)	(-0.63)	(-1.03)	(-0.95)	(0.65)
Year dummies							
2009			0	0	0	0	0
			(.)	(.)	(.)	(.)	(.)
2010			0.0878	0.0772	0.0920	0.156	-0.117
			(0.85)	(0.76)	(0.95)	(1.19)	(-0.86)
2011			0.119	0.134	0.173	0.236	-0.0885
			(0.99)	(1.12)	(1.46)	(1.57)	(-0.44)

2012			0.163	0.184	0.161	0.206	0.188
			(1.23)	(1.41)	(1.31)	(1.27)	(0.83)
2013			-0.0269	0.00686	-0.000228	0.0867	-0.159
			(-0.19)	(0.05)	(-0.00)	(0.52)	(-0.62)
2014			-0.0730	-0.0197	0.0192	0.111	-0.315
			(-0.49)	(-0.13)	(0.13)	(0.61)	(-1.21)
2015			-0.147	-0.102	-0.0810	-0.122	-0.0108
			(-0.93)	(-0.64)	(-0.50)	(-0.60)	(-0.04)
_cons	2.960^{***}	-1.906^{**}	-3.506^{***}	-2.907^{**}	-3.326^{***}	-3.222^{**}	-2.632^{*}
	(4.99)	(-2.90)	(-3.40)	(-2.98)	(-3.65)	(-3.13)	(-2.22)
R^2	0.04	0.28	0.31	0.36	.	0.37	0.26
N	2487	2459	2354	2354	2354	1675	679
Fixed effect regression	No	No	No	No	Yes	No	No

Notes to the tables:
t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

From Table 3 above, we find that *IDR* negatively correlates with total RPT if we pool Hong Kong and Singapore together. We may reproduce the correlation from Models 1 to 4 controlling for various factors and with a year dummy for each year. However, we lose the statistical significance if we apply fixed effect regression (as in Model 5). The reason is that there is not much variance in *IDR*, our key explanatory variable. Since companies do not rarely change board composition radically, the proportion of independent directors is usually identical or in a narrow band for most of our companies. The average of standard deviation of the mean of *IDR* for each company is merely 4.74 percentage points. This might explain why we lose statistical significance between *IDR* and total RPT once we apply fixed effect analysis. For this purpose, we will rely on the general regression model while controlling for time.

However, we do not find any statistical significant relationship between *IDR* and total RPT if we analyze each market separately (as in Models 6 and 7).[33] While this might be partly due to the limit of sample size, we believe that the results from combined data should be robust enough as both countries share similar legal institution and regulations. Table 3 also shows that

[33] In Hong Kong, we may find correlation between *IDR* and total RPT (significant at 10% level only) if we adopt the Model 3 in Table 3 (i.e. taking out the *STATE* dummy) to analyse only the Hong Kong sample.

characteristics regarding the chairman does not seem to matter in relation to total RPT. Moreover, state-owned enterprises (SOEs) in the combined or Hong Kong sample would positively contributed to a higher level of total RPT. Considering that company size also matter to the size of RPT, we may conclude that Chinese SOEs would be a significant factor in contributing to the change of mean of RPT.

We do not include the auditing firm in the regression model. If we include a dummy indicating the largest 4 auditing firm in the world as the external audit, our data shows that the choice of big 4 auditing firms has no correlation with the level of RPT. The dummy produces little impact on the coefficient and standard effort of *IDR* if we put the dummy into Model 4 in Table 3. It may also be because most of other auditing firms outside the group of big 4 are also credible international auditing firms (e.g. BDO or Mazars). Thus, being audited by the Big 4 may not cause much a difference. As Hong Kong and Singapore are both matured markets with strong legal and accounting profession, we believe that being audited by the big 4 auditing firm may not have caused much difference as in less developed market so that the exclusion of the auditing dummy may be justified.

In addition to total RPT, we also have data for subsets of RPT as proxies of tunneling. It is commonly recognize that not all RPTs are bad. Some RPTs may be more efficient for the company to fulfill the firm's underlying needs (Gordon et al. 2007, 4). There are also some academic researches supporting beneficial PRTs. By analyzing a large dataset of Chinese companies between 2002 and 2009, Wong et al. found that related sales may increase firm value, though the value enhancement would disappear under certain situations (e.g. company having a large number of parent directors or high state ownership) (Wong, Kim, and Lo 2015). In some situations, a controlling shareholder may be willing to lend funds to prop up the company and this kind of RPT may be beneficial to the firm (Friedman, Johnson, and Mitton 2003). It is sometimes difficult to tell whether RPTs are more likely to be tunneling or propping up (Peng, Wek, and Yang 2011; Cheung et al. 2009). However, Chang and Hong's study found that various forms of intra-group transactions are extensively used for the purpose of cross-subsidization (Chang and Hong 2000). Thus, prohibiting all RPTs might lead to inefficiency results for a company.

However, one of the most difficult and fundamental challenge of researching on RPT is how to identify RPT (Berkman, Cole, and Fu 2009, 141). There is no single test that can perfectly identify tunneling. Therefore, the alternative is to find some proxies that in our argument is more likely to be tunneling. We identify related lending (i.e. the company issuing a loan to or placing an investment or deposit with a related party), total RPT expenses (i.e. cash outflow through RPTs), and net RPT expenses (i.e. RPT expenses minus RPT income) as potential proxies of tunneling through RPT (Jian and Wong 2010).

Related lending and RPT expenses represent cash outflow to related parties. They are more likely to be tunneling than cash inflow into the firm (Gao and Kling 2008). A study in China also show significant expropriation of minority shareholders in China through inter-corporate loans (Jiang, Lee, and Yue 2010). Therefore, they are likely comprising of tunneling by corporate insiders. Nevertheless, we recognize that they are not all perfect alternatives for tunneling. For example, a company may lend to its joint venture or holding company to prop up finance to avoid any negative impact from the borrower's worsening financial condition. Those dealings may represent a function of an efficient internal capital market (Yeh, Shu, and Su 2012). Therefore, we accept that related lending and related expenses are only potential proxies for tunneling but not a perfect replacement.

For comparison purpose, we also include income from PRTs and related sales (broadly defined to include sales or services to or provided by related parties as well as rental and income/expenses from licensing agreements but excluding financing transactions such as lending, borrowing or investment). It is more difficult to identify related sales as a form of tunneling, as it might benefit a company's earnings (Ge et al. 2010; Jian and Wong 2010; Lo, Wong, and Firth 2010), though whether those sales are conducted in fair terms or whether they are intended for improper purposes (such as manipulating earnings) is a separate question (Jian and Wong 2010). The results are shown in Table 4 below, which presents only pooled data combining Singapore and Hong Kong.

Table 4 Regression table for subsets of RPT data

	(1) RPT expenses	(2) Related lending	(3) Net RPT expenses	(4) RPT income	(5) Related sale
IDR	-0.0291^{**}	-0.00482	-0.0116	-0.0337^{**}	-0.0193
	(-2.61)	(-0.54)	(-0.90)	(-2.60)	(-1.76)
EXEC_CHAIRMAN	-0.264	0.00738	0.00217	-0.346	-0.108
	(-0.83)	(0.03)	(0.01)	(-1.00)	(-0.37)

DUALITY	-0.172	-0.241	0.0980	-0.139	0.142
	(-0.54)	(-1.17)	(0.30)	(-0.46)	(0.52)
MARKET	0.209	0.114	0.383	-0.472	0.260
	(0.65)	(0.52)	(0.97)	(-1.44)	(0.87)
SHAREHOLDING	0.0133	0.00191	0.00545	0.00217	0.00446
	(1.95)	(0.38)	(0.73)	(0.31)	(0.75)
STATE	2.542^{***}	1.254^{***}	1.317^{**}	2.928^{***}	1.767^{***}
	(5.71)	(3.76)	(2.93)	(6.16)	(5.10)
TOTAL_ASSET	0.254^{*}	0.713^{***}	0.622^{***}	0.453^{***}	0.292^{**}
	(2.41)	(7.72)	(5.58)	(3.94)	(3.06)
REVENUE	0.430^{***}	0.0906	0.207^{*}	0.294^{**}	0.494^{***}
	(4.79)	(1.38)	(2.13)	(3.08)	(5.87)
ROA	-0.00217	-0.00224	0.000737	-0.00140	-0.000502
	(-1.15)	(-1.26)	(0.20)	(-0.73)	(-0.15)
Year dummies					
2009	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)
2010	-0.00449	0.0241	0.255	0.170	0.0642
	(-0.05)	(0.34)	(1.59)	(1.74)	(0.60)
2011	0.0851	0.146	0.368	0.117	0.0995
	(0.67)	(1.51)	(1.97)	(0.99)	(0.78)
2012	0.174	0.0981	0.317	0.133	0.0615
	(1.27)	(0.97)	(1.71)	(0.94)	(0.45)
2013	0.00346	0.0812	0.283	0.0989	-0.0333
	(0.02)	(0.73)	(1.36)	(0.64)	(-0.21)
2014	-0.0145	0.0255	0.171	-0.0235	0.00143
	(-0.10)	(0.22)	(0.86)	(-0.15)	(0.01)
2015	-0.160	0.0649	0.188	0.0147	-0.00503
	(-0.97)	(0.53)	(0.84)	(0.09)	(-0.03)
_cons	-4.182^{***}	-7.026^{***}	-4.942^{***}	-3.087^{***}	-3.221^{***}
	(-4.26)	(-9.70)	(-4.27)	(-3.35)	(-3.69)
R^2	0.34	0.47	0.44	0.35	0.43
N	2354	1929	1069	2354	1851

Notes to the tables:
t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4 above shows that *IDR* is significantly and negatively correlated with RPT expenses and income, consistent with the result in Table 3 on total RPT, though we find no conclusive evidence linking *IDR* with the volume of related lending, related sales and net RPT cash outflow. The data in Table 4 support the general conclusion that in the Hong Kong and Singapore markets, better corporate governance would correlated negatively with total RPT and henceforth tunneling through RPT. However, does it mean that a change of corporate governance standard (in terms of board independence) causes the reduction of tunneling? We will explore this question in the next section.

C. Firms in Response to the Shock Having Fewer Tunneling?

In the previous section, we provide some evidence showing that in Hong Kong and Singapore higher board independence correlate with less RPT. However, a more normative question is whether raising board independence standard must have the effect of reducing RPTs. We do not have data of the first introduction of minimum board independence requirement in Hong Kong in 1993 when the SEHK first imposed a requirement of minimum 2 independent directors or in Singapore as in the Code of Corporate Governance published in 2001. However, analyzing the data between 2009 and 2015, we can measure the impact of the SEHK imposing a minimum 1/3 threshold in the 2012 amendment of the Code of Corporate Governance Practices.

To test our Hypothesis 2 above, we conduct a difference-in-difference analysis of our Hong Kong to examine whether the change of rule in Hong Kong in 2012 would have the effect of reducing tunneling. As discussed in Part II above, we identify the change of Code of Corporate Governance Practice 2012 in Hong Kong as the legal shock. However, as we also show in the Section A above, most companies in Hong Kong (and all in Singapore) have complied with the minimum requirement even before 2012, leaving us with a small number of companies that we classify as the treatment group, as they respond to the regulatory change to raise their board independence during the period. The pattern of change of means over time before and after 2012 in Hong Kong market only is shown in Figure 4 below.

Figure 3 The time trend of mean of total RPT in Hong Kong

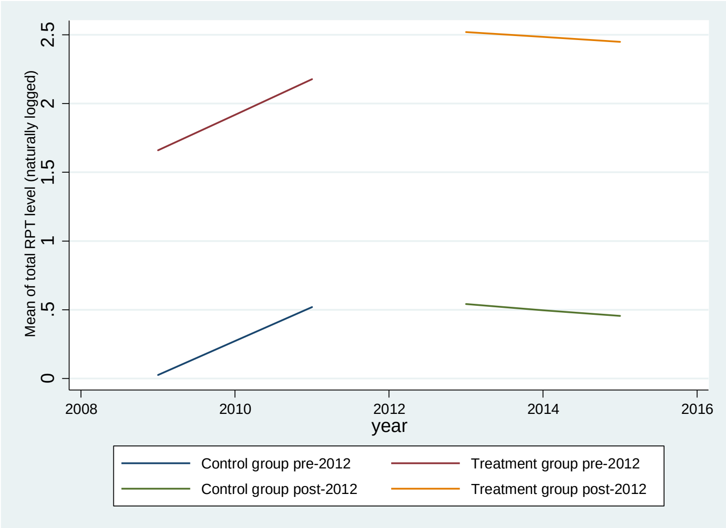


Figure 3 shows that before the rule change in 2012, the mean of RPT between our treatment and control groups of companies share a similar pattern, with the mean of the treatment group higher than that of the control group. Post the rule change, the two groups still seem to show a similar pattern, though in both groups the mean of total RPT is no longer clearly heading upward. We go further to conduct difference-in-difference analysis.[34] The results are shown in Table 5 below. For our analysis, we exclude all observations from 2012.

Table 5 Results of difference-in-difference analysis in Hong Kong

Coefficiency (standard error)	**Time dummy**	**Treatment dummy**	**Interaction**	**Constant**	**R2**
Total RPT	0.227 (0.215)	1.491 (0.328)***	0.327 (0.458)	0.294 (0.148)**	0.03
Related sale	0.212 (0.210)	1.769 (0.248)***	-0.127 (0.360)	1.262 (0.141)***	0.05
Related lending	0.367 (0.180)**	1.224 (0.244)***	-0.073 (0.346)	-1.857 (0.122)***	0.04
RPT expenses	0.205 (0.213)	1.521 (0.322)***	0.194 (0.461)	-0.740 (0.145)***	0.03
Net RPT expenses	0.313 (0.271)	1.187 (0.320)***	0.396 (0.476)	0.874 (0.185)***	0.04

From Table 5 above, we may see that the interaction variable produces no statistically significant result for total RPT or other sub-categories. We also find no significant result if we

[34] Since the rule change takes place in 2012, we exclude data from 2012.

regress with figures of abnormal total RPT and abnormal related sales and abnormal related lending. This indicates the lack of significant causal effect between the change of board independence requirement and tunneling. We do not replicate the same analysis in Singapore as all our sample firms listed in the SGX have largely complied with the minimum requirement during the period, resulting in a lack of treatment group.

D. Concentrated Ownership and Tunneling

Does a higher degree of ownership concentration mean more tunneling? First, does higher concentrated ownership mean less board independence? If we use 30% beneficial stakes as a dummy, the mean of *IDR* of firms with a 30% beneficial owner is marginally lower than those without 30% owner in both Hong Kong (40.42% vs 42.68%) and Singapore (48.47% vs 49.61%), though only in Hong Kong we find the difference in means is statistically significant (p<0.001). Nonetheless, if we analyze the means of *IDR* by comparing firms with a private 30% owner and those without. We find that means between those two groups are very close (41.23% v 40.65% in Hong Kong and 48.37% v 49.7% in Singapore) and there is no statistically significance between the means in both Singapore and Hong Kong. A simple regression (clustered by firms) shows that the amount of beneficial interests negatively correlate with *IDR* (*coefficient*: -0.06; p=0.03) if we combine both markets. Thus, even if there is a correlation between higher concentrated ownership and board independence, the effect is not great.

Second, regarding RPT, our data shows that firms with 30% beneficial owners have a larger than average level of total RPT in both Hong Kong and Singapore, though, again, the difference in means is significant only in Hong Kong (p<0.001) but not in Singapore. Therefore, in sum, from descriptive statistics, it seems that in Hong Kong firms with a 30% beneficial owner has a lower degree of board independence but with a higher level of RPT. However, if we focus on cases with a non-state 30% owner, we find that the mean of firms with non-state 30% owners have a higher mean of total RPT than other firms in Hong Kong (p<0.001). However, in Singapore, firms with a non-state 30% owner has a lower mean of total RPT than other firms (p=0.04). Drawing the two statistics together may indicate that firms in Hong Kong with a higher degree of concentration of ownership would be more prone to tunneling, though we cannot draw the same inference in Singapore.

However, regression results presented in Tables 3 and 4 shows that the amount of beneficial interests (*SHAREHOLDING*) does not have statistically significant relationship with total RPT or any subset of RPT after controlling for other factors. This presumably rebuts the assumption that higher concentrated ownership would mean more tunneling through RPTs. The result may not be surprising, as it does not necessarily take a controlling shareholders to own a higher amount of equity stakes to conduct tunneling. A controlling shareholder with even less than 30% stakes may still control the composition of the board and management if he can gather enough friendly concert persons or proxies in a general meeting. In addition, arguably a controlling shareholder would not have to extract private benefit if he has sufficient amount of control over the firm. Therefore, the lack of significant correlation is not unexpected.

Moreover, one may also argue that a controlling shareholder might be less likely to tunnel once he accumulates a high enough amount of equity stakes, as tunneling might affect negatively the firm value and therefore his own wealth. However, our data also does not provide evidence showing that owners with less stakes would tunnel more. We simply find no proof linking the amount of ownership stakes and RPT.

In addition, the most curious question is about the state as the largest beneficial owner. As shown in both Tables 3 and 4, the *STATE* dummy produces significant and positive correlation with total RPT or subsets of RPT, with large co-efficient. From our sample, it is obvious that Chinese SOEs dominate the category. As it is often a RPT if a SOE deals with another SOE in China, there is little surprise that *STATE* would have such a strong impact on the level of RPT. However, this does not necessarily mean that SOEs are more likely to tunnel than private enterprises (and *vice versa*). As RPT tends to correlate with a company's size, it may not be a surprise that Chinese SOEs have much more RPT than other privately-held firms, as they tend to be larger in size.

C. Normative Reflection and Regulatory Strategies

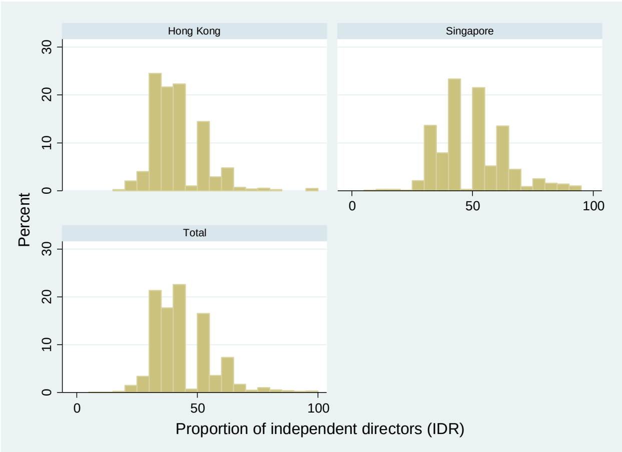
In summary, we have some evidence showing that higher board independence negatively correlates with fewer RPT (and henceforth tunneling) in Hong Kong and Singapore (i.e. supporting our hypothesis 1). However, analyzing Hong Kong data only, we find no causal effect between those firms that respond to the 2012 rule change and those that have complied with the minimum 1/3 threshold since 2009 through difference-in-difference analysis, providing no support to the hypothesis 2 above. In addition, our data show that the amount of beneficial interests does not correlate with the level of RPT, though state ownership seems to be a significant factor in the RPT level. Nonetheless, our data also shows that higher board independence has negative and significant correlation with the level of RPT if we control for both the amount of beneficial stakes and state ownership. This at least partially support our hypothesis 3.

There are a few reflections for policymakers from our data. First, our data offer general support to efforts improving board independence and corporate governance standards in the two markets the past two decades. On the basis that some forms of minimum board independence requirement is in place, we do find that companies with a higher degree of board independence seem to have a lower level of RPT and thereby less tunneling through those dealings. For this purpose, our data supports the positive view discussed in Part II above.

Second, our data shows that keeping raising minimum standards may not be as effective as regulators would believe. We argue that the impact of a particular rule-change should not be over-exaggerated. It is perhaps common in developed and developing countries that legislators respond to a scandal or a specific event to change a rule, hoping to address problems once and for all. However, the change of corporate governance standards are incremental in Hong Kong and Singapore. As discussed above, before the introduction of the minimum 1/3 rule Hong Kong has already requires a minimum number of independent directors on the board as early as in 1993. As mentioned in Part II.A above, most companies listed Hong Kong have complied with the 1/3 threshold even before the rule change. This might partially explain why the effect from the 2012 amendment may not be significant.

The lack of clear causal effect may also be explained by compliance strategies of listed firms. As shown in Figure 2 below, more than half of the observations in Hong Kong have *IDR* between 30% and 45%, while in Singapore there are more firms having more than majority of the board being independent directors. This shows that most companies only manage to satisfy the minimum requirement in both markets, though there are more cases of "super-independent" board among companies listed in Singapore.

Figure 4 Distribution of *IDR* in both markets



In addition, among our 49 companies in the treatment group in Hong Kong, 20 firms actually reduce the size of the board to meet the minimum threshold (without adding more directors), while 29 firms add new independent director(s) onto the board, with or without reducing board size at the same time. On average, those 29 firms add 1 or 2 new independent directors on the board (and no firm added more than 2). This is in line with the SEHK's own estimation that those firms that did not comply with the minimum 1/3 threshold before the 2012 reform might only need to appoint one additional independent director to comply with the requirement (Hong Kong Exchange and Clearing Ltd 2011, [90]).

In sum, this indicates that raising the threshold *per se* does not necessarily mean a firm having more outsiders to monitor the management or controlling shareholder. While we prove that overall higher board independence correlates with less tunneling, regulators have to rethink the benefit of keep raising board independence standards (e.g. by raising the minimum threshold to 1/3 as in Hong Kong) as a dose to corporate scandals or governance failures if many firms simply try to manage the numbers on the board to meet the minimum requirement. Considering the common compliance practice in Hong Kong, whether it worth to further raise the threshold to 1/2 should require a further study that this article cannot answer.

Third, the way most RPTs are reviewed and examined on the board level may also affect the relationship between board independence and tunneling. Under the regimes in Hong Kong and Singapore, RPTs are usually reviewed by the audit committee and probably only major transactions would be considered by all members or even shareholders in a general meeting. This means that the audit committee is the gatekeeper for most RPTs. While the majority of audit committee should comprise of independence directors (and in many cases, all members of the audit committee are independent) in both markets, it also means that more independent directors on the board does not necessarily mean more quality review of RPTs if a new independent director is not on the audit committee. This might explain why we find no causal effect when Hong Kong imposes a minimum 1/3 board independence threshold, despite our data supports the argument that higher board independence may have some deterrence effect on tunneling. It also challenges the utility of raising board independence ratio for the purpose of reducing tunneling as an independent director might have few opportunities to review RPTs unless he is also a member of the audit committee.

Moreover, the level of RPT and tunneling may be a function of a combination of factors. Enhancing board independence is only one of the regimes to facilitate the supervision of RPTs. There is clearly a limit on what independent directors can do on their own. Thus, board independence is by no means a cure to all problems of benefit extraction by the management. This might partly explain the lack of causal effect between prescribing minimum board independence and RPT level. We might need to further consider the interaction of board independence and other regimes dealing with RPTs to see the true effect of higher board independence if we look for more than just correlation. There should be further researches on directors' characters and social ties to understand more of independent directors' real influence in the board room. It might also worth to research on how to profile 'bad' owners more efficiently. After all, this might be the biggest missing factor to affect the probability of tunneling in a firm.

Last, the presence of foreign listed companies in the stock market might affect regulatory strategies on corporate governance issues. In our sample, over 80% of firms in Hong Kong are incorporated outside Hong Kong (mostly in either Bermuda or Cayman Islands), while in contrast over 85% of firms in the Singapore sample are local companies. This might affect the enforcement of rules and the design of legal and regulatory framework on listed companies. For example, in Singapore, a change of the Companies Act would influence a majority of listed companies, while in contrast exchange rules and regulatory rules imposed by market regulator may be a more effective tool than company law for listed companies in Hong Kong. Our sample also shows that in both Hong Kong and Singapore, the mean of total RPT by foreign firms is higher than that of domestic firms (p=0.003 for Hong Kong and p=0.002 for Singapore).

The dominance of foreign firms may explain why in Hong Kong there is a lack of robust correlation between *IDR* and RPT. On the one hand, the financial regulator and the stock exchange should in theory have more power to regulate local firms and would have more challenges in deal with firms with much assets and operation in foreign markets, even though the code of corporate governance is "comply or explain" in nature. In contrast, our Singapore data shows that better board independence could help to reduce tunneling, though the actual causal effect still requires some further study. From this light, how to design a regulatory strategy to code with foreign listings in Hong Kong (or any other market with a substantial number of foreign listings) will be an important issue in addition to improving corporate governance standards. In other words, legal transplant of corporate governance rules has to be refined to suit the local context in order to make it more effective.

IV. Conclusion

In conclusion, this article shows that in Hong Kong and Singapore higher board independence correlates negatively with the level of RPT, which we use as a proxy for tunneling. This lends support to the argument that the transplantation of Anglo-American model of corporate governance in the two Asian markets has worked. However, we find no causal effect of Hong Kong's imposition of minimum board independence threshold in 2012 on reducing tunneling. Our data also shows that a controlling having more ownership stakes does not necessarily mean more tunneling, while state ownership would play a big role in determining the level of RPT. However, we also show that higher board independence does have correlation with fewer RPT after we control the amount of beneficial stakes and state ownership, indicating the function of corporate governance rules in private enterprises, though it requires deeper analysis to examine the real effect of a particular change of corporate governance rule on tunneling.

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